



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,090	09/08/2003	Carl J. Beierle	2000-033	2089
32170	7590	04/18/2006		
U.S. ARMY TACOM-ARDEC ATTN: AMSTRA-AR-GCL BLDG 3 PICATINNY ARSENAL, NJ 07806-5000			EXAMINER BELL, BRUCE F	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/605,090	BEIERLE ET AL.	
	Examiner	Art Unit	
	Bruce F. Bell	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/8/03</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 16 are vague and indefinite with respect to fastener being removeable from the orifice responsively to at least one of a specific torque and heat. It is unclear to the examiner how removing the fastener prevents galvanic corrosion of the coated fastener, once the fastener has been coated with the inhibitor and with the anaerobic composition. Why would one want to remove the already coated fastener unless they are doing it initially to actually coat the fastener? It does not appear to the examiner that this is the reasoning for this removal step. Applicant is requested to clarify and/or correct.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maandi et al (5302679) in combination with Shulver et al (4692988) and Geer et al (US 2002/0195592).

Maandi et al disclose an adhesive composition capable of post-cure expansion comprising a methacrylate and a maleimide that are capable of effectuating expansion upon post-cure. A homogeneous mixture of a monomer and maleimide are subjected to a first cure heat stage wherein a rigid partially-cured plastic is formed and a post-cure heat stage to effectuate permanent expansion of the cured adhesive composition. See abstract. The patent further discloses a method of adhesively joining parts together using the inventive compositions is also disclosed. See col. 3, lines 34-35. Examples of materials used in the adhesive are disclosed at col. 4, lines 9-25. The initial cure stage is dependent on factors such as the percentage of monomer and maleimide, additive such as catalyst, free radical initiator accelerators, plasticizers, thickeners and other ingredients conventionally added to anaerobic adhesive compositions. See col. 5, lines 16-21. The agents used in the anaerobic composition may be incorporated where functionally desirable, provided that they do not interfere with the expansion of the cured composition. See col. 6, lines 54-58.

Maandi et al does not disclose the use of a corrosion inhibitor being deposited on the fastener before coating the anaerobic composition, nor does Maandi et al disclose that the fastener and orifice be of two different metals.

Shulver et al discloses a method of protecting mating screw threads at least under tightening torques by used of a dry lubricant of molybdenum disulphide that is applied to one screw thread and a liquid lubricant applied to the other screw thread. See abstract. Molybdenum disulphide is known to bond well to steel surfaces so that a molecular thickness layer of the molybdenum can be produced. The material is also

Art Unit: 1746

known for its lubricant qualities for moving parts and is added to normal lubricating oil. See col. 4, lines 41-47. The molybdenum disulphide is resistant to high temperatures so that it forms a permanent matrix maintaining the metal particles immovable and since the dry film lubricant is a solid at such temperatures, it can not be displaced by high pressures. See col. 5, lines 32-36. In order to reduce torques, the female screw-thread is coated with a fluid modifier which is not a solvent for the dry film lubricant previously applied to the female thread. The fluid modifier is a low viscosity material such as a fluorocarbon and may incorporate a corrosion inhibitor.

Geer et al disclose a cathodic coating for ferrous and nonferrous metal substrates. The patent further discloses that aluminum is the preferred anodic metal, but that an anodic metal that creates sufficient potential difference from another metal used in the system to polarize the cathodic surface will work. See page 3, para [0039].

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the instant invention was made because even though the prior art of Maandi et al does not disclose using a corrosion inhibitor with their anaerobic composition, Maandi et al does disclose that other additives may be used as long as they don't affect the expansion of their cured material. Since Shulver et al discloses that molybdenum disulphide helps to protect the screw threads and is mixed with a corrosion inhibitor to protect the moving parts of the fastener, even at high temperatures, one having ordinary skill in the art would be motivated to use such inhibitor on the fastener along with the anaerobic composition to not only protect the fastener but to also keep the protection in place when the anaerobic composition expands, since molybdenum

Art Unit: 1746

disulphide does not move when displaced by high pressures. The prior art of Geer et al is disclosed for the purpose of showing that it is conventional in the art that the anodic and cathodic material are those of aluminum and steel and that the cathodic material can be other materials as well as can be the anodic material, but that all is necessary is that the anodic material create sufficient potential difference from the other metal used to polarize the cathodic surface. The materials for the anaerobic composition are as set forth in the Maandi et al patent.

Therefore, the prior art of Maandi et al in combination with Shulver et al and Geer et al render the applicants instant invention as obvious for the reasons set forth above.

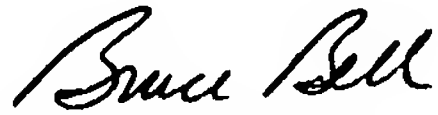
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BFB
April 17, 2006


Bruce F. Bell
Primary Examiner
Art Unit 1746